INDEX

A

Abarenicola species, feeding and ecology of, 343.
Aberrant echinoids, orientation of crystals in apical plates of, 618.
Absorption of nutrients by rediae, 591.
Abstracts of papers presented at the MBL, 448.
Accessory boring organ of Urosalpinx, enzymes of, 401.
Accumulation and loss of radiozinc by Mytilus, 438.
Acetabularia, photosynthetic rhythm of, 659, 670.
Acrosome reaction in Arbacia, effects of antibodies on, 465 (abstract).
Actinomycin, effects of on Arbacia embryos, 184.
  on cockroach pars intercerebralis, 679.
Action spectrum of Gyrodinium phototaxis, 150.
Activity, cyclic, in Oncopeltus, 510.
  cycles in cockroach, nervous system control of, 679.
Adaptation of Uca white pigment to background, 606.
Adaptive reduction of water permeability in crab, 643.
Adiyodi, K. G., and K. K. Nayar. Hemolymph proteins and reproduction in Periplaneta, 271.
Adult rotifers, DNA synthesis in, 502.
Aedes, feeding and oviposition behavior in, 369.
Aerobic enzymes of Urosalpinx accessory boring organ, 401.
Age in relation to regenerative powers of Nereis, 567.
Akin, G. C., and J. R. Akin. The effect of trypsin on regeneration inhibitors in Tubularia, 82.
Alcohols, effects of on Arbacia embryos, 184.
Alga, photosynthetic rhythm of, 659, 670.
  uptake and assimilation of amino acids by, 391.
Algae, role of in oxygen balance of reef corals, 378.
Allen, M. J. Nucleic acid and protein synthesis in the developing oocytes of the budding form of the syllid Autolytus, 287.
Alternating photoperiods, effects of on white-crowned sparrow, 330.
Amino acid transport in dogfish intestine, 630.
Amino acids, chemoreceptive responses of barnacles to, 128.
  exogenous, utilization of by starfishes, 317.
  uptake and assimilation of by Platymonas, 391.
  as chemoreception stimulants for Nassarius, 106.
Aminoacyl tRNA ligases, heterologous reactions among, 449 (abstract).
Annelid, endocrinology of, 567.
  feeding and ecology of, 343.
  histochemical and bacteriological studies on digestion in, 166.
  morphogenesis of setae in, 426.
  nucleic acid and protein synthesis in oocytes of, 287.
  tube-dwelling, oxygen uptake by, 600.
Annual Report of the MBL, 1.
  reproductive cycle of cidaroid sea urchin, 578.
Antennal gland of crayfish, enzymes and glycogen in, 539.
Antibody, papain-digested, effect of on fertilizability of Arbacia eggs, 468 (abstract).
Antidiuretic factor from shark, 488 (abstract).
Apley, M. L., W. D. Russell-Hunter and R. J. Avolizi. Annual reproductive turnover in the salt-marsh pulmonate snail, Melampus, 455 (abstract).
Apostome ciliates, excystation of, 310.
Arbacia, developmental modifications in, 184.
Arnold, J. M., and G. Szabó. Microtubules and Golgi vesicles in cephalopod iridophore development, 456 (abstract).
Arora, K. L., and I. L. Kosin. Autoradiographic and cytological study of blastodermal cells in turkey eggs subjected to extended pre-incubation storage, 303.
Artemia, development of oocytes in, 453 (abstract).
  new sex-linked recessive mutant of, 487 (abstract).
Aschelminth, DNA synthesis in, 502.
Asplanchna, DNA synthesis in, 502.
Assimilation of amino acids by Platymonas, 391.
Asterias, utilization of exogenous amino acids by, 317.

AUSTIN, C. R. See P. J. OLDS, 477 (abstract).
Autolytus, nucleic acid and protein synthesis in oocytes of, 287.
Autoradiographic study of starfish amino acid distribution, 317.
of synthesis of nucleic acid and proteins in annelid oocytes, 287.
of turkey blastoderm, 303.
AVOLIZI, R. J. See M. L. APLEY, 455; W. D. RUSSELL-HUNTER, 470 (abstracts).
Axon of squid, effect of various substances on membrane properties of, 469 (abstract).

B

Bacteriological studies on digestion in leeches, 166.
BAL, A. K. See P. L. KRUPA, 474 (abstract).
Balanus, chemoreception in, 128.
BANG, F. B. Blood clot formation in the antenna of the hermit crab Pagurus, 456 (abstract).
Barnacles, chemoreception in, 128.
BARNES, S. N., A. L. BELL AND S. GELFANT. The fixation and fine structure of white blood cells of the smooth dogfish shark Mustelus, 457 (abstract).
BARROS, C., AND G. GIUDICE. Effect of polyamines on ribosomal RNA synthesis in sea urchin embryos, 457 (abstract).
BARTELL, C. K., K. R. RAO AND M. FINGERMAN. Analysis of melanin-dispersing activity of eyestalk extracts from Uca, 458 (abstract).
See M. FINGERMAN, 448; K. R. RAO, 448, 479 (abstracts), 606.
BARTH, L. G., AND L. J. BARTH. The uptake of Na-22 during induction in presumptive epidermis cells of the Rana gastrula, 495.
BEAUREGARD, L. J. See J. P. CASSIDY, 461 (abstract).
BEDWINEK, J. M., AND G. T. SCOTT. The influence of fluphenazine and chlorpromazine on melanophore pigment-dispersing activity in the blood of the albino rat, 458 (abstract).
Behavior, chemoreceptive, of Nassarius, 90.
feeding and oviposition, of Aedes, 369.
of Abarenicola species, 343.
of Oncopeltus, cyclic nature of, 510.
of Uca in intertidal area, 487 (abstract).
Behavioral aspects of annelid commensal, 450 (abstract).
BELL, A. L., AND A. FARMANFARMAIAN. Fine structure of the intestine and hemal sinuses of Thyone, 459 (abstract).
See S. N. BARNES, 457 (abstract).
BENTFIELD, SR. M. J. See C. W. BIRKY, JR., 502.
Betaine, responses of barnacles to, 128.
BETELM, S. See S. ZIGMAN, 492 (abstract).
BIGNAMI, R. Z. See C. W. BIRKY, JR., 502.
Bird, effect of photoperiod on, 330.
egg blastoderm, autoradiographic study of, 303.
BIRKY, C. M., JR., R. Z. BIGNAMI AND SR. M. J. BENTFIELD. Nuclear and cytoplasmic DNA synthesis in adult and embryonic rotifers, 502.
BISHOP, D. W. See W. W. SCHRANK, 453; R. L. SHOGER, 485 (abstracts).
Blaberus, neuromuscular excitatory substance from, 526.
Blastoderm cells of turkey, autoradiographic study of, 303.
Blood concentration of crab as function of salinity, 643.
Blue light, effect of on Gyrodinium phototaxis, 150.
BOETTIGER, E. G. See H. B. HARTMAN, 467 (abstract).
Bombyx brain hormone, purification of, 355.
Boring organ of Urosalpinx, enzymes of, 401.
Brachyuran crab, osmoregulation in, 643.
Brackish-water crab, osmotic regulation in, 643.
BRADBURY, P. C., AND W. TRAGER. Excystation of apostome ciliates in relation to molting of their crustacean hosts. II, 310.
Brain hormone of Bombyx, purification of, 355.
Breakdown of sea urchin multivalent fertilizins, 255.
Briareum, oxygen balance of, 378.
Bromide influx and efflux in Fundulus, 411.
Bryozoa, ectoproct, newly discovered type collections of, 484 (abstract).
six fundamental problems on, 483 (abstract).
BUCK, J., AND F. E. HANSON, JR. Zooid response in Renilla, 459 (abstract).
Budding form of Autolytus, nucleic acid and protein synthesis by, 287.
Bug (Oncopeltus), cyclic activity in, 510.
BURBANCK, M. P., AND W. D. BURBANCK. Chromosomes of Cyathura, 460 (abstract).
Burrowing mechanism in Leptosynapta and Golfingia, 470 (abstract).

C

Calcite in sea urchin spines, 141.
CALDWELL, R. L., AND H. DINGLE. The regulation of cyclic reproductive and feeding activity in the milkweed bug Oncopeltus by temperature and photoperiod, 510.

California sea-mussel, loss of radiozinc from, 438.
Cambarus, neuromuscular excitatory substance from, 526.
CANDELAS, G. C., AND A. MONROY. Activation of protein synthesis during maturation and fertilization in Asterias, 460 (abstract).
Protein synthesis during maturation and after fertilization in the eggs of Cerebratulus, 460 (abstract).
Carbohydrases in leech gut, 166.
Carbohydrate metabolism of rediae, 591.
Carbohydrates in hemolymph of Periplaneta, 271.
Carbon dioxide photoassimilation in Acetabularia, 570.
Carbon fixation by reef corals, 378.
Carcinoma cell proliferation as studied by labeled thymidine uptake and radioautography, 483 (abstract).
Carcinus blood, effect of on excystment of apostome ciliates, 310.
Cardiac-allatectomy of Periplaneta, effect of on protein metabolism, 271.
Cardioexcitatory substance extracted from Mercenaria, 486 (abstract).
Cardisoma gill, excised, respiration of, 245.
Carnitine as substitute for choline in diet of Drosophila, 548.
CARR, W. E. S. Chemoreception in the mud snail Nassarius. I, 90; II, 106.
CARRIKER, M. R. See P. PERSON, 401.
CASSIDY, J. D., AND L. J. BEAUREGARD. Isotopic analysis of oogenesis in Habrobracon and Artemia, 461 (abstract).
Cells, blastodermal, of turkey eggs, autoradiographic study of, 303.
Central nervous system control of circadian rhythmicity in the cockroach. I, 679.
Cesium-137 irradiation of cellular particulates, 697.
Chaetogenesis in Nereis, 426.
CHAMBERLAIN, J. RNA synthesis in nonnucleate fragments of Arbacia eggs, 461 (abstract).
Chemical comparisons of univalent and multivalent sea urchin fertilizins, 255.
Chemoreception in cirripedes, 128.
in Nassarius, 90, 106.
CHENEY, R. H. See C. C. SPEIDEL, 486 (abstract).
Chloride balance in Fundulus, 411.
concentration of crab urine, 643.
Choline requirements of Drosophila, 548.
Chromatophores, white, of Uca, 606.
Chromosomal basic proteins in Arbacia eggs, sperm and embryos, 490 (abstract).
Chromosome number of Cyathura, 460 (abstract).
Cidaroid sea urchin, gametogenesis and reproductive cycle in, 578.
Cilia development in Nereis trochophore, electron microscopy of, 472 (abstract).
Ciliate, apostome, excystation of, 310.
Circadian rhythm in Acetabularia, 659, 670.
rhythms of cockroach, central nervous system control of, 679.
Circulatory system of Magelona, 472 (abstract).
Cirripedes, chemoreception in, 128.
Classification of echinoids, 578.
Clot formation in blood of Pagurus, 456 (abstract).
Cobalt, effect of on Arbacia embryos, 184.
Cockroach, nervous system control of circadian rhythms in, 679.
neuromuscular excitatory substance from, 526.
hemolymph proteins, 271.
Coelenterate regeneration inhibitors, effect of trypsin on, 82.
Collagenolytic activity in crustacean hepatopancreas, 463 (abstract).
COLLIER, M., AND M. L. JONES. Observations on the reproductive and general morphology of Streblospio, 462 (abstract).
Colony fusion compatibility types in Botryllus, 473 (abstract).
Colpophyllia, oxygen balance of, 378.
Comparison of univalent and multivalent sea urchin fertilizins, 255.
CONDREA, E. See P. ROSENBERG, 451 (abstract).
Conjugated proteins of Periplaneta hemolymph, 271.
CONNELL, P. M. See M. FINGERMAN, 463 (abstract).
Continuous measurements of oxygen exchange in Acetabularia, 659.
Control of circadian rhythmicity in cockroach, 679.
mechanisms for feeding and oviposition in Aedes, 369.
COOK, B. J. An investigation of Factor S, a neuromuscular excitatory substance from insects and Crustacea, 526.
Copulation, role of in feeding behavior of Aedes, 369.
Corals, reef, oxygen balance in, 378.
Corneal collagen of dogfish, 492 (abstract).
Coumarin, effect of on Arbacia embryos, 184.
COUSINEAU, G. H. See P. K. KRUPA, 474 (abstract).
Crab, brackish-water, osmoregulation in, 643.
fiddler, white chromatophores of, 606.

relation of molting of to excystation of apostome ciliates, 310.
gill, excised, respiration of, 245.
CRAMER, N. M. See F. M. FISHER, JR., 464 (abstract).
Crayfish, neuromuscular excitatory substance from, 526.
antennal gland, enzymes and glycogen in, 539.
CRISP, D. J. Chemoreception in cirripedes, 128.
Crustacea, neuromuscular excitatory substance from, 526.
chemoreception in, 128.
osmoregulation in, 643.
antennal gland, histochemistry of, 539.
gill, excised, respiration of, 245.
host-molting, relation of to excystation of apostome ciliate, 310.
Cryptocotyle rediae, exogenous glucose utilization by, 591.
Crystal orientation in apical plates of aberrant echinoids, 618.
Cycle, reproductive, of cidaroid sea urchin, 578.
Cycles of activity in cockroach, nervous system control of, 679.
of oxygen exchange in Acetabularia, 659, 670.
Cyclic photoperiods, effect of on white-crowned sparrows, 330.
reproductive and feeding activity in Oncopeltus, 510.
Cycloleucine, transport of by dogfish intestine, 630.
Cytochrome oxidase in Urosalpinx boring organ, 401.
Cytological study of turkey blastoderm cells, 303.
Cytoplasmic DNA synthesis in rotifers, 502.

D

DNA and DNase, effects of on Arbacia embryos, 184.
synthesis in Autolytus oocytes, 287.
in rotifer embryos and adults, 502.
Darkness, effect of on behavior of Uca chromatophores, 606.
on gonadal growth of white-crowned sparrow, 330.
on oxygen exchange of alga, 659.
role of in cyclic activity of Oncopeltus, 510.
in responses of Gyrodinium, 150.
DAVENPORT, D. See W. G. HAND, 150.
Decreases in radiozinc concentrations in Mytilus tissues, 438.
Deficiency of oxygen, role of in metabolism of Mesochaetopterus, 600.
DEPHILLIPS, H. A., JR., AND K. E. VAN HOLDE. Oxygen equilibria of hemocyanin, 462 (abstract).
See K. E. VAN HOLDE, 490 (abstract).
DESHA, D. L. See J. A. MILLER, JR., 476 (abstract).
Detergents, detrimental effects of on invertebrate larvae, 476 (abstract).
Developing oocytes of Autolytus, nucleic acid and protein synthesis in, 287.
Rana embryo, Na-22 uptake during induction in, 495.
rotifers, DNA synthesis in, 502.
turkey blastoderm, autoradiographic study of, 303.
Development of setae in Nereis, 426.
Developmental modifications in Arbacia, 184.
Dichocoenia, oxygen balance of, 378.
Dietary requirements of Drosophila, 548.
Differentiation of Rana epidermal cells after Na-22 treatment, 495.
Digenetic rediae, exogenous glucose utilization by, 591.
Digestion in leeches, histochemical and bacteriological studies on, 166.
DINGLE, H. See R. L. CALDWELL, 510.
Dinoflagellate, short-term photic regulation of receptor mechanism in, 150.
Dinoflagellates, role of in oxygen balance of reef corals, 378.
Directional response of Gyrodinium, with respect to light, 150.
Distribution of Mesochaetopterus, in relation to oxygen uptake, 600.
of radiozinc in Mytilus tissues, 438.
of Thalassopsammon in Woods Hole area, 492 (abstract).
Diurnal cycle in Acetabularia, 659, 670.
DIXON, K. E. See J. S. MCDANIEL, 591.
DIZON, A. E. See T. H. GOLDSMITH, 466 (abstract).
Dogfish intestine, membrane transport in, 630.
Drinking, rate of, in Fundulus, 411.
Drosophila, relation between sexual activity and dietary requirements of, 548.
DUNHAM, P. B., A. R. FREEMAN AND H. GRUNDFEST. Increased potassium flux in the lobster walking limb axon induced by hyposmotic challenge, 462 (abstract).
See L. C. STONER, 454 (abstract).

E

EBERT, T. A. Growth and repair of spines in the sea urchin Strongylocentrotus, 141.
Echinaster, utilization of exogenous amino acids by, 317.

Echinoderm, gametogenesis and reproductive cycles in, 578.
egg fertilizins, comparisons of, 255.
eggs, RNAs in during oogenesis, 229.
embryo, effect of metabolic substances on, 184.
spines, growth and repair of, 141.
Echinoderms, utilization of exogenous amino acids by, 317.
Echinoids, aberrant, crystal orientation in apical plates of, 618.
Ecology of reef corals, 378.
of Rhithropanopeus, 643.
of two species of Abarenicola, 343.
Effect of cardiac-allatectomy on protein metabolism in Periplaneta, 271.
of glycogen on excystation of apostome ciliates, 310.
of photoperiods on gonadal growth and pituitary gonadotropins in white-crowned sparrow, 330.
of trypsin on regeneration inhibitors in Tubularia, 82.
Efflux of ions in Fundulus, 411.
Egg fertilizins, sea urchin, comparison of, 255.
-laying behavior in Aedes, 369.
Eggs, sea urchin, RNAs in during oogenesis, 229.
turkey, autoradiographic study of, 303.
Ehrenpreis, S., and J. H. Fleisch. Alteration of smooth muscle receptors by heat and urea, 450 (abstract).
Eigner, E. A. See R. B. Loftfield, 449 (abstract).
Eisen, A. Z. Collagenolytic activity in crustacean hepatopancreas, 463 (abstract).
Elder, H. Y. See R. D. Hunter, 470; E. H. Smith, 485 (abstracts).
Electron microscopy of Arbacia fertilization membrane, 471 (abstract).
of Cryptocotyle rediae and cercariae, 474 (abstract).
of Fucus and Palaemonetes gametes and early embryos, 473 (abstract).
of Nereis trochophore, 472 (abstract).
of septate junctions, 480 (abstract).
of sperm and sperm-egg interaction in Libinia, 468 (abstract).
of Thyone intestine and hemal sinuses, 459 (abstract).
of white blood cells of Mustelus, 457 (abstract).
Electrophysiology of isolated parts of Tubularia, 469 (abstract).
of scallop eye, 490 (abstract).
of zooid response in Renilla, 459 (abstract).
Elminius, chemoreception in, 128.
Embryo, Arbacia, effect of metabolic substances on, 184.
Rana, Na-22 uptake during induction in, 495.
turkey, autoradiographic study of, 303.
Embryonic rotifers, DNA synthesis in, 502.
Endocrine control of white chromatophores in Uca, 606.
system of Periplaneta, in relation to protein metabolism, 271.
Endocrinological relations in Nereis during metamorphosis, 426, 567.
studies on Bombyx, 355.
Enzyme activities in Acetabularia, 670.
in leech gut, 166.
Enzymes of Urosalpinx accessory boring organ, 401.
Epidermal cells of starfishes, role of in uptake of exogenous amino acids, 317.
of Rana gastrula, Na-22 uptake of, 495.
Epitokous setae, morphogenesis of in Nereis, 426.
Erpobdella, digestion in, 166.
Erythropodium, oxygen balance in, 378.
Esterases in crayfish antennal gland, 539.
Evans, D. H. See W. T. W. Potts, 411.
Excitatory substances, neuromuscular, from insects and Crustacea, 526.
Excystation of apostome ciliates in relation to molting of their crustacean hosts, 310.
Exogenous amino acids, utilization of by starfishes, 317.
glucose utilization by rediae, 591.
Exopeptidases in leech gut, 166.

F

Factor S, a neuromuscular excitatory substance from insects and Crustacea, 526.
Farmanfarmaian, A. See A. L. Bell, 459 (abstract).
Farner, D. S. See B. K. Follett, 330.
Favia, oxygen balance of, 378.
Fecundity of Drosophila, in relation to diet, 548.
Feeding of Abarenicola, 343.
activity in Oncopeltus, cyclic nature of, 510.
in Magelona, 476 (abstract).
mechanism in Lineus, 464 (abstract).
and oviposition behavior in Aedes, 369.
responses in barnacles, 128.
in Nassarius, 90, 106.
Female cockroaches, changes in hemolymph proteins of, 271.
Ferguson, J. C. An autoradiographic study of the utilization of free exogenous amino acids by starfishes, 317.
Fernandez, H. L. See F. C. Huneeus, 469 (abstract).

FERNANDEZ, H. R. See T. H. GOLDSMITH, 466 (abstract).
Fertility of Drosophila, in relation to diet, 548.
Fiddler crab, white chromatophores of, 606.
FINGERMAN, M., P. M. CONNELL AND P. YOSHIOKA. A possible mechanism for the actions of the red pigment-dispersing and -concentrating hormones in Palaemonetes, 463 (abstract).
K. R. RAO AND C. K. BARTELL. Is there a physiological limit to the response of melanophores in Uca to the melanin-dispersing hormone, 448 (abstract).
See C. K. BARTELL, 458; K. R. RAO, 448, 479 (abstracts); 606.
Fish, sodium and chloride balance in, 411.
FISHER, F. M., JR., AND N. M. CRAMER. New observations on the feeding mechanism in Lineus, 464 (abstract).
FISHMAN, L., AND M. LEVY. Studies on the nematocyst capsule protein from the sea anemone Metridium, 464 (abstract).
Flagellate, uptake and assimilation of amino acids by, 391.
FLEISCH, J. H. See S. EHRENPREIS, 450 (abstract).
Flora of leech gut, 166.
FOLLETT, B. K., D. S. FARNER AND M. L. MARTIN. The effects of alternating long and short daily photoperiods on gonadal growth and pituitary gonadotropins in the white-crowned sparrow, 330.
FOLSOM, T. R. See D. R. YOUNG, 438.
Food, digestion of in leeches, 166.
FORWARD, R. See W. G. HAND, 150.
FOURTNER, C. R., AND C. B. METZ. Tests for the effects of antibodies on the acrosome reaction in Arbacia, 465 (abstract).
FRANCESCONI, R. P., M. M. THALER AND C. A. VILLEE. Alterations in the malate dehydrogenase isozyme pattern during early development in Arbacia embryos, 465 (abstract).
See M. M. THALER, 490 (abstract).
Free exogenous amino acids, utilization of by starfishes, 317.
FREEMAN, A. R. See P. B. DUNHAM, 462 (abstract).
Frog gastrula, Na-22 uptake during induction in, 495.
Fruitfly, relationship between dietary requirements and sexual activity of, 548.
Fucose in Lytechinus fertilizins, 255.
FULLER, E. G., AND A. OWCZARZAK. Esterases, phosphatases and glycogen in the antennal gland of Pacifastacus, 539.
Fundulus, sodium and chloride balance in, 411.

G

Galactose inhibition of amino acid uptake by dogfish intestine, 630.
Gamete fusion in Arbacia oocytes, study of with fluorescent antibodies, 482 (abstract).
Gametes of Nereis, as index of stage of metamorphosis, 426.
Gametogenesis in a cidaroid sea urchin, 578.
Gamma irradiation of cellular particulates, 697.
Gastropod, chemoreception in, 90, 106.
boring organ, enzymes of, 401.
parasites, exogenous glucose utilization by, 591.
Gastrotrichs of Woods Hole region, 452 (abstract).
Gastrula of frog, Na-22 uptake during induction in, 495.
GATES, C. S. See A. W. SENFT, 484 (abstract).
GEER, B. W. Dietary choline requirements for sperm motility and normal mating activity in Drosophila, 548.
GELFANT, S. See S. N. BARNES, 457; T. PEDERSON, 478 (abstracts).
Gill of land crab, respiration of, in vitro, 245.
GIUDICE, C. See C. BARROS, 457; R. PELTZ, 479; H. ROY, 481 (abstracts).
Glossiphonia, digestion in, 166.
Glucose utilization by rediae, 591.
Glutamic acid, responses of barnacles to, 128.
Glycine, uptake of by Platymonas, 391.
Glycogen, effect of on excystation of apostome ciliate, 310.
in crayfish antennal gland, 539.
GOLDING, D. W. Endocrinology, regeneration and maturation in Nereis, 567.
GOLDSMITH, T. H., A. E. DIZON AND H. R. FERNANDEZ. Microspectrophotometry of single crustacean rhabdoms, 466 (abstract).
Gonadal growth of white-crowned sparrow, effect of photoperiod on, 330.
Gonadotropins in white-crowned sparrow, effect of photoperiod on, 330.
Gonads of cidaroid sea urchin, seasonal changes in, 578.
Gonotrophic cycles in Aedes, relation of to feeding behavior, 369.
GOODENOUGH, D. A. See S. ITO, 471 (abstract).
Gorgonaceans, oxygen balance of, 378.
GREEN, J. P. Melanogenesis in the fiddler crab, 466 (abstract).
GREEN, R. H., K. D. HOBSON AND S. L. SANTOS. Analysis of invertebrate distribution in the intertidal zone of Barnstable Harbor, 454 (abstract).

Grosch, D. S. See D. F. Moffett, 476; R. D. Squire, 487 (abstracts).
Growth of gonads in white-crowned sparrow, effect of photoperiod on, 330.
in Nereis, 567.
of Platymonas in culture, 391.
of spines in Strongylocentrotus, 141.
Grundfest, H. See P. B. Dunham, 462 (abstract).
Gut structure in leeches, 166.
Gymnodinoides, relation of excystment of to molting of crustacean host, 310.
Gyrodinium, short-term photic regulation of receptor mechanism in, 150.

H

Habitats of two species of Abarenicola, 343.
Hagins, W. A. See R. E. McGaughy, 451 (abstract).
Hand, W. G., R. Forward and D. Davenport. Short-term photic regulation of a receptor mechanism in a dinoflagellate, 150.
Hanson, F. E., Jr. See J. Buck, 459 (abstract).
Hartman, H. B., and E. G. Boettiger. Further observations on the functional organization of the crustacean proprioceptor, 467 (abstract).
Haschemeyer, A. E. V. Effect of temperature acclimation on protein synthetic system of toadfish, 467 (abstract).
Hastings, J. W. See G. T. Reynolds, 480 (abstract).
Headrick, N., and C. B. Metz. Effect of papain-digested anti-jelly antibody on the jelly coat and fertilizability of Arbacia eggs, 468 (abstract).
Hegab, E. S. H. H. See J. A. Miller, Jr., 455 (abstract).
Hellebust, J. A., J. Terborgh and G. C. McLeod. The photosynthetic rhythm of Acetabularia, 670.
Helobdella, digestion in, 166.
Hemiclepsis, digestion in, 166.
Hemocyanin, oxygen binding and quaternary structure of, 490 (abstract).
oxygen equilibria of, 462 (abstract).
Hemolymph proteins and reproduction in Periplaneta, 271.
Henricia, utilization of exogenous amino acids by, 317
Heterotrophic nutrition in phytoplankters, possible importance of, 391.
Hinsch, G. W. Ultrastructural studies of sperm and sperm-egg interaction following natural fertilization of Libinia, 468 (abstract).
Hirudinea, digestion in, 166.
Histochemical studies on digestion in leeches, 166.
Histochemistry of crayfish antennal gland, 539.
of Urosalpinx boring organ, 401.
Histological study of amino acid uptake by starfishes, 317.
Hobson, K. D. The feeding and ecology of two North Pacific Abarenicola species, 343.
See R. H. Green, 454 (abstract).
Hofman, F., and N. B. Rushforth. Electrical activity of isolated parts of Tubularia, 469 (abstract).
Holland, N. D. Gametogenesis during the annual reproductive cycle in a cidaroid sea urchin (Stylocidaris), 548.
Hollander, M. See S. Lerman, 475 (abstract).
Hormonal activity in Nereis, 567.
Hormone, brain, of Bombyx, purification of, 355.
deprivation in Nereis, effect of on setogenesis, 426.
Hormones controlling white chromatophores in Uca, 448 (abstract).
Host-molting, relation of to excystation of apostome ciliate, 310.
Hummon, W. D. Interstitial marine gastrotrichs from Woods Hole, 452 (abstract).
Huneeus, F. C., and H. L. Fernandez. Effects of detergents, fluorescent dyes and sulfhydryl reagents on some of the membrane properties of the squid axon, 469 (abstract).
Hunter, R. D., and H. Y. Elder. Analysis of burrowing mechanism in Leptosynapta and Golfingia, 470 (abstract).
Hyalophysa, relation of excystment of to molting of crustacean host, 310.
Hydra tentacles, isolated, behavioral responses of, 449 (abstract).
Hydroid regeneration inhibitors, effect of trypsin on, 82.
Hypothermia, THAM and glucose in asphyxia of newborn, 455 (abstract).

I

Ichikawa, M. See H. Ishizaki, 355.
Identification of stimulatory substances for Nassarius chemoreception, 106.
Induced metamorphosis in Nereis, effect of on development of setae, 426.
Induction in Rana gastrula, Na-22 uptake during, 495.
Influx of ions in Fundulus, 411.
Inhibition by galactose of amino acid uptake by dogfish intestine, 630.

Inhibitors of regeneration in Tubularia, effect of trypsin on, 82.
Insect, cyclic feeding and reproductive activity in, 510.
Insects, neuromuscular excitatory substances from, 526.
Intestine, dogfish, membrane transport in, 630.
Invertebrate distribution in Barnstable Harbor intertidal zone, 454 (abstract).
Ion balance in Fundulus, 411.
Irradiation of cellular particulates, 697.
Irrigation cycle in Abarenicola, 343.
ISHIZAKI, H., AND M. ICHIKAWA. Purification of the brain hormone of the silkworm Bombyx, 355.
Isophyllia, oxygen balance of, 378.
Isozyme pattern during development of Arbacia, changes in, 465 (abstract).
ITO, S., J.-P. REVEL AND D. A. GOODENOUGH. Observations on the fine structure of the fertilization membrane of Arbacia, 471 (abstract).
IVKER, F. S. Localization of tissue incompatibility and specificity of the overgrowth reaction in Hydractinia, 471 (abstract).

J

JACOBOWITZ, D. See M. SPIRTES, 486 (abstract).
JENNINGS, J. B., AND V. M. VAN DER LANDE. Histochemical and bacteriological studies on digestion in leeches, 166.
JOHANSEN, K. See J. A. PETERSEN, 600.
JONES, M. L., AND J. V. SIMPSON. Observations on the circulatory system of Magelone, 472 (abstract).
See M. COLLIER, 462; R. F. MCMAHON, 476 (abstracts).
JUDSON, C. L. Feeding and oviposition behavior in the mosquito Aedes, 369.

K

KALNINS, V. Ultrastructural observations on the development of cilia in the trochophore of Nereis, 472 (abstract).
KANWISHER, J. W., AND S. A. WAINWRIGHT. Oxygen balance in some reef corals, 378.
KARAKASHIAN, S., AND R. MILKMAN. Colony fusion compatibility types in Botryllus, 473 (abstract).
Killifish, sodium and chloride balance in, 411.
KOEHLER, L. D. Electron microscopic observations of gametes and early zygotes of Fucus and Palaemonetes, 473 (abstract).
KOSIN, I. L. See K. L. ARORA, 303.
KRUPA, P. L., A. K. BAL AND G. H. COUSINEAU. Ultrastructural localization of acid phosphatase in rediae and cercariae of Cryptocotyle, 474 (abstract).
KUSANO, K. Postsynaptic effects of linearly increasing current in the presynaptic terminal of giant squid axon, 474 (abstract).

L

Labeling of RNAs of sea urchin eggs during oogenesis, 229.
Lactate, role of in chemoreception of Nassarius, 106.
Lactate dehydrogenase in Urosalpinx boring organ, 401.
Land crab gill, respiration of, 245.
VAN DER LANDE, V. M. See J. B. JENNINGS, 166.
LANE, C. E. See D. J. QUINN, 245.
LAZAROFF, N. Inactivation of motility in marine phyto-flagellates and invertebrate spermatozoa by phosphorothioate compounds, 475 (abstract).
Leeches, histochemical and bacteriological studies on digestion in, 166.
Lens proteins, relationship between soluble and insoluble, 450 (abstract).
Lepas, chemoreception in, 128.
LERMAN, L. See A. WATANABE, 491 (abstract).
LERMAN, S., M. HOLLANDER AND S. ZIGMAN. The formation of insoluble protein in the ocular lens, 475 (abstract).
See S. ZIGMAN, 450, 492 (abstracts).
Leucine inhibition of cycloleucine uptake by dogfish intestine, 630.
Leucophaea, nervous system control of circadian rhythms in, 679.
neuromuscular excitatory substance from, 526.
LEVY, M. See L. FISHMAN, 464 (abstract).
Light, effect of on activity of Oncopeltus, 510.
on behavior of Uca chromatophores, 606.
on gonadal growth in white-crowned sparrows, 330.
on oxygen exchange in alga, 659.
on productivity of reef corals, 378.
role of in directional response of Gydrodinium, 150.
Lipids, metabolism of in Periplaneta, 271.
LIPSON, S. J. See P. PERSON, 401.
Lithium treatment of Rana gastrulae, 495.
LIUZZI, A. See G. T. REYNOLDS, 480 (abstract).
LOCHHEAD, J. H., AND M. S. LOCHHEAD. The development of oocytes in the brine shrimp, Artemia, 453 (abstract).
Locomotory activity rhythms in cockroach, nervous system control of, 679.

LOFTFIELD, R. B., AND E. A. EIGNER. Heterologous reactions among aminoacyl t-RNA ligases, 449 (abstract).
Loligo, winter distribution of, 489 (abstract).
Loss of Zn-65 from Mytilus, 438.
Lugworms, feeding and ecology of, 343.
Lytechinus eggs, RNAs in during oogenesis, 229.
fertilizins, comparison of, 255.

M

Manicina, oxygen balance of, 378.
MATEYKO, G. M. Developmental modifications in Arbacia by various metabolic substances, 184.
Mating activity of Drosophila, relationship of diet to, 548.
of Oncopeltus, cyclic nature of, 510.
in Aedes, role of in oviposition behavior, 369.
Maturation of gonads in Nereis, 567.
of sea urchin oocytes, RNA synthesis during, 229.
MCDANIEL, J. S., AND K. E. DIXON. Utilization of exogenous glucose by the rediae of Parorchis and Cryptocotyle, 591.
MCGAUGHY, R. E., AND W. A. HAGINS. The origin of fast photoelectric effects in squid retina, 451 (abstract).
MCLEOD, G. C. See J. TERBORGH, 659; J. A. HELLEBUST, 670.
MCMAHON, R. F., AND M. L. JONES. Observations on feeding in Magelona, 376 (abstract).
Measurements of oxygen exchange in Acetabularia, 659.
of photoassimilation of carbon dioxide in Acetabularia, 670.
Melanin-dispersing activity of Uca eyestalk extracts, 458 (abstract).
effects of organic solvents on, 479 (abstract).
Melanin dispersion in Uca, 606.
Melanogenesis in fiddler crab, 466 (abstract).
Melanophore response in Uca to melanin-dispersing hormone, 448 (abstract).
Membrane transport in dogfish intestine, 630.
Mescaline, effects of on Arbacia embryos, 184.
Mesochaetopterus, oxygen uptake of, 600.
Mesoglea of stauromedusan, structure and function of, 485 (abstract).
Metabolic substances, effects of on Arbacia development, 184.
Metabolism of excised crab gills, 245.
of Mesochaetopterus, 600.
of protein in Periplaneta, effect of cardiac allatectomy on, 271.
of reef corals, 378.
Metamorphosis of Nereis, development of setae during, 426.
Metaphase block in stored turkey egg blastoderms, 303.
METZ, C. B. See C. R. FOURTNER, 465; N. HEADRICK, 468; L. M. SCHECHTMAN, 482 (abstracts).
Microtubules and Golgi vesicles in cephalopod iridophore development, 456 (abstract).
MILKMAN, R. See S. KARAKASHIAN, 473 (abstract).
Milkweed bug, cyclic activity in, 510.
MILLER, J. A., JR., et al. Hypothermia, THAM and glucose in asphyxia of the newborn, 455 (abstract).
The effects of hyperbaric oxygen on cell movements, differentiation and growth during regeneration in Tubularia, 476 (abstract).
Mitochondria of rat cells, effects of irradiation on, 697.
Mitochondrial DNA synthesis in rotifers, 502.
Mitosis, relation of to DNA synthesis in rotifers, 502.
in turkey blastodermal cells, as affected by pre-incubation storage, 303.
Mitotic apparatus of marine eggs, effects of dinitrophenol on, 482 (abstract).
of sea urchin eggs, dynein-like ATPase in, 491 (abstract).
Modifications of development in Arbacia, 184.
MOFFETT, D. F., AND D. S. GROSCH. Detrimental effects of linear alkylate sulfonate on larvae of selected marine invertebrates, 476 (abstract).
Molecular form of Bombyx brain hormone, 355.
Mollusc, loss of radiozinc from, 438.
boring organ, enzymes of, 401.
parasites, exogenous glucose utilization by, 591.
Molting of crustacean host, relation of to excystation of apostome ciliate, 310.
MONROY, A. See G. C. CANDELAS, 460 (abstracts).
Monastrea, oxygen balance of, 378.
Morphogenesis of Arbacia, effect of metabolic substances on, 184.
of setae in Nereis, 426.
Morphology of sea urchin spines, 141.
MORTON, M. L. See B. K. FOLLETT, 330.
Mosquito, feeding and oviposition behavior in, 369.
Motility in marine phyto-flagellates and invertebrate sperm, inhibition of by phosphorothioate compounds, 475 (abstract).
of sperm, relation of to dietary requirements of Drosophila, 548.

Mucopolysaccharides in cidaroid sea urchin eggs, 578.
Mud snail, chemoreception in, 90, 106.
Multivalent sea urchin fertilizins, comparison of with univalent, 255.
Muricid gastropod boring organ, enzymes of, 401.
Musca, neuromuscular excitatory substance from, 526.
Muscle receptors, alteration of, by heat and urea, 450 (abstract).
Mussa, oxygen balance of, 378.
Mussel, loss of Zn-65 from, 438.
Mustelus intestine, membrane transport in, 630.
Mytilus, loss of Zn-65 from, 438.

N

Nassarius, chemoreception in, 90, 106.
Navar, K. K. See K. G. Adiyodi, 271.
Nereis, endocrinology, regeneration and maturation in, 567.
morphogenesis of setae in, 426.
Neuromuscular excitatory substance from insects and Crustacea, 526.
Neurosecretion in cockroach, 679.
relation of to protein metabolism, 271.
in Nereis, 567.
Nicotine effects on Arbacia gametes, 486 (abstract).
Nishiitsutsuji-Uwo, J., S. F. Petropulos and C. S. Pittendrigh. Central nervous system control of circadian rhythmicity in the cockroach, 679.
Nitrate uptake by Platymonas, 391.
4-Nitroquinoline, effects of on Arbacia embryos, 184.
Normal development stages for Arbacia, 184.
North, B. B., and G. C. Stephens. Uptake and assimilation of amino acids by Platymonas, 391.
Nuclear DNA synthesis in rotifers, 502.
Nucleic acid and protein synthesis in dogfish peripheral blood, 478 (abstract).
in budding form of Autolytus, 287.
synthesis in rotifers, 502.
Nudibranchs, ecology of, 452 (abstract).
Nucleolus, synthetic activity of in Autolytus oocytes, 287.
Nutrition of Drosophila, relation of to sexual activity, 548.
of echinoderms, 317.

O

Obara, S. Effect of some organic cations on generator potentials of stretch receptor of crayfish, 477 (abstract).
Oculina, oxygen balance of, 378.
Olds, P. J., and C. R. Austin. Entry of Cerebratulus spermatozoa into Echinarachnius eggs, 477 (abstract).
Oncopeltus, cyclic feeding and reproductive activity in, 510.
Oocyte growth in Periplaneta, relation of to hemolymph proteins, 271.
size, as correlated with metamorphosis of Nereis, 426.
as criterion of maturity of Nereis, 567.
Oocytes of Autolytus, nucleic acid and protein synthesis by, 287.
Oogenesis, role of in oviposition behavior of Aedes, 369.
in cidaroid sea urchins, 578.
in Habrobracon and Artemia, 461 (abstract).
of sea urchin eggs, RNA synthesis during, 229.
Organic composition of sediment, role of in ecology of Abarenicola, 343.
of developing squid eggs, 470 (abstract).
Orientation of crystals, in apical plates of aberrant echinoids, 618.
Osmotic regulation in Rhithropanopeus, 643.
relations in Fundulus, 411.
of land crab gill in vitro, 245.
Ouabain, effect of on respiration of crab gill tissue, 245.
Ova, turkey, autoradiographic stu'y of, 303.
Ovarian cycle of Periplaneta, relation of to hemolymph proteins, 271.
growth in white-crowned sparrow, effect of photoperiod on, 330.
Oviposition and feeding behavior in Aedes, 369.
in Oncopeltus, cyclic nature of, 510.
Owczarzak, A. See E. G. Fuller, 539.
Oxidative enzymes of Urosalpinx boring organ, 401.
Oxygen balance in some reef corals, 378.
consumption of excised crab gills, 245.
exchange in Acetabularia, as affected by light, 659, 670.
uptake by Mesochaetopterus, 600.
Oyster drill, enzymes of boring organ of, 401.

P

Pacifastacus antennal gland, histochemistry of, 539.
Pagurus, relation of molting of to excystation of apostome ciliates, 310.
Papain, effects of on Arbacia embryos, 184.
Papilio, use of in assay of Bombyx brain hormone, 355.
Paracer, S. M. Additional information concerning Tiedemann's bodies of Asterias, 478 (abstract).

Parapodia of Nereis, production of setae by, 426.
Parasites, exogenous glucose utilization by, 591.
Parorchis rediae, exogenous glucose utilization by, 591.
Pars intercerebralis, role of in control of circadian rhythms in cockroach, 679.
Particle size, role of in feeding of Abarenicola, 343.
PEDERSON, T., AND S. GELFANT. Nucleic acid and protein synthesis in dogfish peripheral blood in vivo and in vitro, 478 (abstract).
PELTZ, R., AND G. GIUDICE. The control of skeleton differentiation in sea urchin embryos, 479 (abstract).
Penaeus extracts as stimulatory substances for Nassarius chemoreception, 90, 106.
Periplaneta, hemolymph proteins and reproduction in, 271.
nervous system control of circadian rhythms in, 679.
neuromuscular excitatory substance from, 526.
Permeability of Fundulus to sodium and chloride, 411.
of integument of Rhithropanopeus, 643.
PERSON, P., A. SMARSH, S. J. LIPSON AND M. R. CARRIKER. Enzymes of the accessory boring organ of the muricid gastropod Urosalpinx. I, 401.
PETERSEN, J. A., AND K. JOHANSEN. Aspects of oxygen uptake in Mesochaetopterus, a tube-dwelling polychaete, 600.
PETROPULOS, S. F. See J. NISHIITSUTSUJI-UWO, 679.
Phosphatases in crayfish antennal gland, 539.
in leech gut, 166.
Phosphorylating sites in irradiated cellular particulates, uncoupling at, 697.
Photic regulation of receptor in dinoflagellate, 150.
Photoassimilation of carbon dioxide in Acetabularia, 670.
Photoperiod, effect of on light exchange of alga, 659, 670.
as regulating factor in cyclic activity of Oncopeltus, 510.
Photoperiods, effects of on white-crowned sparrow, 330.
Photosynthetic rhythm of Acetabularia, 659, 670.
Physical comparisons of univalent and multivalent sea urchin fertilizins, 255.
Physiological control of feeding and oviposition in Aedes, 369.
Phytoplankter, photic control of receptor mechanism in, 150.
uptake and assimilation of amino acids by, 391.
PIATIGORSKY, J., AND A. TYLER. Radioactive labeling of RNAs of sea urchin eggs during oogenesis, 229.
Pigment cells of Uca, physiology of, 606.
-concentrating and -dispersing hormones in Palaemonetes, possible mode of action of, 463 (abstract).
-dispersing activity in blood of white rat, effect of fluphenazine and chlorpromazine on, 458 (abstract).
Piscicola, digestion in, 166.
PITTENDRIGH, C. S. See J. NISHIITSUTSUJI-UWO, 679.
Pituitary gonadotropins, effects of photoperiod on, in white-crowned sparrow, 330.
Platybdella, digestion in, 166.
Platymonas, uptake and assimilation of amino acids by, 391.
Plexaura, oxygen balance of, 378.
Polychaete, feeding and ecology of, 343.
morphogenesis of setae of, 426.
oocytes, nucleic acid and protein synthesis in, 287.
Pontobdella, digestion in, 166.
Porites, oxygen balance of, 378.
Potassium flux in motor axon, 462 (abstract).
ion, responses of barnacles to, 128.
-stimulated respiration in excised gill of land crab, 245.
Potentials, bi-ionic action, in squid giant axon, 491 (abstract).
POTTS, W. T. W., AND D. H. EVANS. Sodium and chloride balance in the killifish Fundulus, 411.
Pre-incubation storage of turkey eggs, effect of on cytology, 303.
Presumptive epidermis cells of Rana, Na-22 uptake of, 495.
Proboscis response as index of chemoreception in Nassarius, 90, 106.
Productivity, organic, of reef corals, 378.
Proline, responses of barnacles to, 128.
Pronase, effects of on Arbacia embryos, 184.
Proprioceptor of crustacean, functional organization of, 467 (abstract).
Protein nature of Bombyx brain hormone, 355.
synthesis in developing oocytes of Autolytus, 287.
during maturation and fertilization in Asterias and Cerebratulus eggs, 460 (abstract).
synthesizing machinery of toadfish, effect of temperature on, 467 (abstract).
Proteins in lymph of cockroach during reproduction, 271.

of Metridium nematocyst capsule, 464 (abstract).
Protozoan excystation, relation of to host molting, 310.
Purification of Bombyx brain hormone, 355.

Q

QUINN, D. J., AND C. E. LANE. Sodium- and potassium-stimulated respiration in the excised gill of the land crab, Cardisoma, 245.

R

RNA and RNase, effects of on Arbacia embryos, 184.
synthesis in Autolytus oocytes, 287.
in non-nucleate Arbacia egg fragments, 461 (abstract).
in sea urchin embryos, effect of polyamines on, 457 (abstract).
RNAs of sea urchin eggs during oogenesis, 229.
RABINOWITZ, L. See R. I. SUBERMAN, 488 (abstract).
Radioactive labeling of RNAs of sea urchin eggs during oogenesis, 229.
Radioautographic studies on rotifers, 502.
Radioautography of Autolytus oocytes, 287.
Radiocarbon-labeled amino acids, utilization of by starfishes, 317.
Radiosodium uptake during induction in Rana gastrula, 495.
Radiozinc, loss of from Mytilus, 438.
Rana gastrula, Na-22 uptake during induction in, 495.
RAO, K. R., C. K. BARTELL AND M. FINGERMAN. Effect of organic solvents on melanin-dispersing activity of eyestalks from Uca, 479 (abstract).
M. FINGERMAN AND C. K. BARTELL. Hormones controlling the white chromatophores of the fiddler crab Uca, 448 (abstract).
Physiology of the white chromatophores in the fiddler crab Uca, 606.
See C. K. BARTELL, 458; M. FINGERMAN, 448 (abstracts).
Rat cellular particulates, irradiation of, 697.
RAUP, D. M., AND E. F. SWAN. Crystal orientation in the apical plates of aberrant echinoids, 618.
READ, C. P. Studies on membrane transport. I, 630.
Receptor, stretch, of crayfish, effect of organic cations on, 477 (abstract).
Red light, effects of on phototaxis of Gyrodinium, 150.
Rediae, utilization of exogenous glucose by, 591.
Reduction of water permeability in crab, 643.
Reductive pentose cycle enzymes in Acetabularia, in relation to photosynthetic rhythms, 670.
Reef corals, oxygen balance in, 378.
Regeneration of echinoderm spines, 141.
Regeneration inhibitors in Tubularia, effect of trypsin on, 82.
in Nereis, 567.
in Tubularia, effects of hyperbaric oxygen on, 476 (abstract).
Regional differences in physiology of white chromatophores of Uca, 606.
Regulation of cyclic activity in Oncopeltus, 510.
of receptor in dinoflagellate, 150.
of salts and water in Rhithropanopeus, 643.
Relation of host molting to excystation of apostome ciliate, 310.
Repair of spines in Strongylocentrotus, 141.
Reproduction of Drosophila, relation of to dietary requirements, 548.
of Periplaneta, relation of hemolymph proteins to, 271.
Reproductive activity in Oncopeltus, cyclic nature of, 510.
cycle of cidaroid sea urchin, 578.
turnover, annual, in Melampus, 455 (abstract).
Requirements, dietary, of Drosophila, 548.
Respiration of excised gill of land crab, 245.
rate of Abarenicola, 343.
of reef corals, 378.
Retina of squid, origin of fast photoelectric effects in, 451 (abstract).
REVEL, J.-P. Some observations on the fine structure of septate junctions, 480 (abstract).
See S. ITO, 471 (abstract).
REYNOLDS, G. T., B. L. STRUNK AND A. W. SENFT. Scintillomicroscopy utilizing image intensification techniques for the detection of radioactive tracers, 481 (abstract).
et al. Studies of radiation effects and lifetime characteristics of the light output of scintillation light standards, 480 (abstract).
See A. W. SENFT, 484; B. L. STRUNK, 487 (abstracts).
Rhabdoms of crustacean, microspectrophotometry of, 466 (abstract).
Rhithropanopeus, osmoregulation in, 643.

Rhythm, photosynthetic, of Acetabularia, 659, 670.
of migration of white chromatophores in Uca, 606.
Rhythmic nature of activity in Oncopeltus, 510.
Rhythms, circadian, in cockroach, nervous system control of, 679.
Ribosomes, synthesis of in sea urchin embryo, 481 (abstract).
ROBINOWITZ, B. See J. A. MILLER, JR., 476 (abstract).
ROBSON, H. H. See H. T. YOST, 697.
Role of pars intercerebralis in control of circadian rhythms in cockroach, 679.
ROSENBERG, P., AND E. CONDREA. Demonstration of phospholipid splitting as factor responsible for venom action on squid giant axon, 451 (abstract).
Rotifers, DNA synthesis in, 502.
ROY, H., AND G. GIUDICE. Studies on the synthesis of ribosomes in sea urchin embryos, 481 (abstract).
RUSHFORTH, N. B. Behavioral responses of isolated tentacles of Hydra, 449 (abstract).
See F. HOFMAN, 469 (abstract).
RUSSELL-HUNTER, W. D., AND R. J. AVOLIZI. Organic content in developing squid eggs assessed from carbon, nitrogen, and ash, and its evolutionary significance, 470 (abstract).
See M. L. APLEY, 455 (abstract).

S

Salinity relations in crab, 643.
Samia, use of in assay of Bombyx brain hormone, 355.
SANTOS, S. L. See R. H. GREEN, 454 (abstract).
SAWADA, N. The effect of dinitrophenol and other phosphorylation uncouplers on the mitotic apparatus of marine eggs, 482 (abstract).
SCHECHTMAN, L. M., AND C. B. METZ. Attempts to demonstrate persistent sperm plasma membrane following gamete fusion in Arbacia oocytes utilizing fluorescent antibodies, 482 (abstract).
See W. W. SCHRANK, 453 (abstract).
Schistocerca, neuromuscular excitatory factor from, 526.
SCHMEER, SR. R. A study of the kinetics of cellular proliferation of the Krebs-2 transplantable solid carcinoma and coexisting duodenum as determined by H^3-uptake and autoradiography, 483 (abstract).
SCHOPF, T. J. M. Six fundamental problems in the Phylum Ectoprocta, 483 (abstract).
Summary of rediscovered type collections of North American east coast Ectoprocta, 484 (abstract).
SCHRANK, W. W., et al. Electrically induced spawning in the male and female horseshoe crab Limulus, 453 (abstract).
SCHROEDER, P. C. Morphogenesis of epitokous setae during normal and induced metamorphosis in the polychaete annelid Nereis, 426.
Scintillation liquid light standards, lifetime characteristics of, 480 (abstract).
Scintillomicroscopy for detection of radioactive tracers, 481 (abstract).
and autoradiography of Schistosoma, 484, 487 (abstract).
Scleractinia, oxygen balance of, 378.
SCOTT, G. T. See J. M. BEDWINEK, 458 (abstract).
Sea urchin, cidaroid, gametogenesis and reproductive cycle in, 578.
egg RNAs, 229.
embryos, effects of metabolic substances on, 184.
plates, orientation of crystals in, 618.
spines, growth and repair of, 141.
Secretion of hormone by Nereis, 567.
Sediment composition, role of in feeding of Abarenicola, 343.
SENFT, A. W., et al. Comparison of observation of C-14 proline uptake in Schistosoma by means of scintillomicroscopy and conventional radioautography, 484 (abstract).
See G. T. REYNOLDS, 481; B. L. STRUNK, 487 (abstracts).
Setae, morphogenesis of in Nereis, 426.
Sexual activities in Aedes, in relation to feeding, 369
in Drosophila, relation of to dietary requirements, 548.
dimorphism in crayfish antennal gland histochemistry, 539.
SHAPLEY, R. M. See J. TOYODA, 490 (abstract).
SHOGER, R. L., AND D. W. BISHOP. Sperm activation and fertilization in Limulus, 485 (abstract).
See W. W. SCHRANK, 453 (abstract).
Short-term photic regulation of receptor mechanism in dinoflagellate, 150.
Shrimp extracts as stimulants in Nassarius chemoreception, 90, 106.
Siderastrea, oxygen balance in, 378.
Silkworm brain hormone, purification of, 355.

SIMON, J. L. Behavioral aspects of Histriobdella, 450 (abstract).
SIMPSON, J. V. See M. L. JONES, 472 (abstract).
Site of RNA synthesis in Autolytus oocytes, 287.
Situs inversus in aberrant echinoids, 618.
Size of oocytes, as index of metamorphosis of Nereis, 426.
of sea urchin and spine morphology, relation between, 141.
Skeletal differentiation in sea urchin embryos, 479 (abstract).
SMARSH, A. See P. PERSON, 401.
SMITH, E. H., AND H. Y. ELDER. Structure and function of the mesoglea in a stauromedusan, 485 (abstract).
SMITH, R. I. Osmotic regulation and adaptive reduction of water-permeability in brackish-water crab, Rhithropanopeus, 643.
Snail, chemoreception in, 90, 106.
parasites, exogenous glucose utilization by, 591.
Sodium balance in Fundulus, 411.
-stimulated respiration in excised gill of land crab, 245.
uptake during induction in Rana gastrula, 495.
Spawning of cidaroid sea urchin, 578.
of Limulus, induced electrically, 453 (abstract).
SPEIDEL, C. C., AND R. H. CHENEY. Nicotine effects on the gametes of Arbacia, 486 (abstract).
Sperm activation and fertilization in Limulus, 484 (abstract).
entry into Echinarachnius eggs, 477 (abstract).
motility, relation of to dietary requirements, in Drosophila, 548.
Spermatogenesis in cidaroid sea urchin, 578.
Spines of Strongylocentrotus, growth and repair of, 141.
SPIRTES, M. A., AND D. JACOBOWITZ. Chromatographic separation of a cardioexcitatory substance extracted from Mercenaria, 486 (abstract).
Squid giant axon synapse, 474 (abstract).
SQUIRE, R. D., AND D. S. GROSCH. "Swimmerette," a new sex-linked recessive mutant in the brine shrimp Artemia, 487 (abstract).
Stalk responses in cirripedes, 128.
Starfishes, utilization of exogenous amino acids by, 317.
STEPHENS, G. C. See B. B. NORTH, 391.
Sterility of carnitine-fed Drosophila, 548.
STERN, S. Physical and chemical comparisons of univalent and multivalent sea urchin fertilizins, 255.
STILLMAN, F. P., AND J. P. GREEN. Intertidal activity of Uca, 487 (abstract).
Stimulation of respiration in excised crab gill by sodium and potassium, 245.
Stimulatory substances involved in chemoreception of Nassarius, 90, 106.
STONER, L. C., AND P. B. DUNHAM. Temperature acclimation in Tetrahymena, 454 (abstract).
Stop-response in Gyrodinium, 150.
Storage of turkey eggs, effect of on cytology, 303.
Streblospio, reproductive and general morphology of, 462 (abstract).
Strongylocentrotus, crystal orientation in apical plates of, 618.
growth and repair of spines of, 141.
eggs, RNAs in during development, 229.
STRUNK, B. L., G. T. REYNOLDS AND A. W. SENFT. Scintillomicroscopic observations of proline uptake in Schistosoma, 487 (abstract).
See G. T. REYNOLDS, 480, 481; A. W. SENFT, 484 (abstracts).
Studies on membrane transport. I, 630.
STUNKARD, H. W. The life-cycle and developmental stages of a digenetic trematode, 488 (abstract).
Stylocidaris, gametogenesis and reproductive cycle in, 578.
SUBERMAN, R. I., AND L. RABINOWITZ. Shark antidiuretic factor: Inhibition of water diuresis in Mustelus, 488 (abstract).
Substrate composition, role of in feeding behavior of polychaete, 343.
Succinate dehydrogenase in Urosalpinx boring organ, 401.
Sucrose, uptake of by Rana gastrula, 495.
Sugars, transport system for, in dogfish intestine, 630.
SUMMERS, W. C. Winter distribution of Loligo determined by exploratory trawling, 489 (abstract).
Surface absorption of nutrients by rediae, 591.
SWAN, E. F. See D. M. RAUP, 618.
Syllid, nucleic acid and protein synthesis in oocytes of, 287.
Sympatric species of Abarenicola, feeding and ecology of, 343.
Synchrony of DNA synthesis in rotifers, 502.
Synthesis of DNA in rotifers, 502.
of protein and nucleic acid by Autolytus oocytes, 287.
SZABÓ, G. See J. M. ARNOLD, 456 (abstract).

T

TASAKI, I. See A. WATANABE, 491 (abstract).
Taurine, responses of barnacles to, 128.
Taurocholate, effects of on Arbacia embryos, 184.
Taxonomy of echinoids, 578.
TAYLOR, E. W. See R. WEISENBERG, 491 (abstract).
Temperature acclimation in Tetrahymena, 454 (abstract).
regulation of cyclic activity in Oncopeltus, 510.
TERBORGH, J., AND G. C. MCLEOD. The photosynthetic rhythm of Acetabularia. I, 659. See J. A. HELLEBUST, 670.
Testicular growth in white-crowned sparrows, as affected by photoperiod, 330.
Tests of aberrant echinoids, orientation of crystals in, 618.
Thais, exogenous glucose utilization by parasite of, 591.
THALER, M. M., R. P. FRANCESCONI AND C. A. VILLEE. Chromosomal basic proteins in sea urchin eggs, sperm and embryos, 490 (abstract).
See R. P. FRANCESCONI, 465 (abstract).
Thalidomide, effects of on Arbacia embryos, 184.
Theromyzon, digestion in, 166.
Thymine, effects of on Arbacia embryos, 184.
Tiedemann's bodies of Asterias, 478 (abstract).
Time-table for development of Arbacia, 184.
Tissue concentration of radiozinc in Mytilus, 438.
incompatibility and specificity of overgrowth reaction in Hydractinia, 471 (abstract).
TOYODA, J., AND R. M. SHAPLEY. The intracellularly recorded response in the scallop eye, 490 (abstract).
TRAGER, W. See P. C. BRADBURY, 310.
Translocated Mytilus, loss of radiozinc from, 438.
Translocation of labeled amino acids in starfishes, 317.
Transplantation experiments with lugworms, 343.
Transport, membrane, in dogfish intestine, 630.
Trematode, digenetic, life-cycle and developmental stages of, 488 (abstract).
Trypsin, effects of on Arbacia embryos, 184.
on regeneration inhibitors in Tubularia, 82.
Tube-dwelling annelid, oxygen uptake by, 600.
Tubularia regeneration inhibitors, effect of trypsin on, 82.
Turkey egg blastoderms, radioautographic study of, 303.
TYLER, A. See J. PIATIGORSKY, 229.

U

Uca, white chromatophores of, 606.
blood, effect of on excystment of apostome ciliates, 310.
Uncoupling at three phosphorylating sites in irradiated cellular particulates, 697.
Univalent sea urchin fertilizin, comparison of with multivalent, 255.
Uptake of amino acids by Platymonas, 391.
of Na-22 during induction in Rana gastrula, 495.
of oxygen by Mesochaetopterus, 600.
Urine, crab, salt concentration of, 643.
Urosalpinx, exogenous glucose utilization by parasite of, 591.
boring organ, enzymes of, 401.
Utilization of exogenous amino acids by starfishes, 317.
of glucose by rediae of Parorchis and Cryptocotyle, 591.

V

VAN HOLDE, K. E., AND H. A. DEPHILLIPS, JR. Oxygen binding and quaternary structure of hemocyanin, 490 (abstract).
See H. A. DEPHILLIPS, JR., 462 (abstract).
Velocity of amino acid uptake by Platymonas, 391.
Venom action on squid giant axon, phospholipid splitting as factor in, 451 (abstract).
VIA, M. See J. A. MILLER, JR., 455 (abstract).
VILLEE, C. A. See R. P. FRANCESCONI, 465; M. M. THALER, 490 (abstracts).
Vitellarium of rotifers, DNA synthesis in, 502.
Vitellogenic proteins, synthesis of in Periplaneta, 271.

W

WADE, B. A. Ecological studies of New England nudibranchs, 452 (abstract).
WAINWRIGHT, S. A. See J. W. KANWISHER, 378.
WATANABE, A., I. TASAKI AND L. LERMAN. Bi-ionic action potentials in squid giant axons intracellularly perfused with sodium salts, 491 (abstract).
Water permeability of Rhithropanopeus, 643.
relations in Fundulus, 411.

WEISENBERG, R., AND E. W. TAYLOR. The presence of a dynein like ATPase in the soluble phase and in the isolated mitotic apparatus of sea urchin eggs, 491 (abstract).
White chromatophores of Uca, physiology of, 606.
White-crowned sparrow, effect of photoperiod on, 330.

Y

YOSHIOKA, P. See M. FINGERMAN, 463 (abstract).
YOST, H. T., M. T. YOST AND H. H. ROBSON. Studies of the effect of irradiation of cellular particulates, 697.
YOUNG, D. R., AND T. R. FOLSOM. Loss of Zn-65 from the California sea-mussel Mytilus, 438.

Z

ZIGMAN, S., AND S. LERMAN. The relationship between soluble and insoluble proteins in the lens, 450 (abstract).
and S. BETELM. A study of dogfish corneal collagen, 492 (abstract).
See S. LERMAN, 475 (abstract).
Zinc-65, loss of from Mytilus, 438.
ZINN, D. J. Preliminary analysis of Thalassopsammon in Woods Hole waters, 492 (abstract).
Zonotrichia, effect of photoperiod on gonadal growth in, 330.
Zooxanthellae, role of in oxygen balance of reef corals, 378.